

P a t e n t C l a i m s :

1. A method of estimating the pitch of a speech signal
5 (2), said method comprising the steps of:
 - dividing the speech signal into segments,
 - calculating for each segment a conformity function for the signal, and
 - detecting peaks in the conformity function,
- 10 c h a r a c t e r i z e d in that the method further comprises the steps of:
 - calculating an average value of pitch estimates estimated in a number of previous segments,
 - calculating for each peak in the conformity function the difference between the position of the peak and said average value, and
 - using the position of the peak having the smallest value of said difference as an estimate of the pitch.
- 20 2. A method according to claim 1, c h a r a c t e r - i z e d in that it further comprises the steps of:
 - sampling the speech signal to obtain a series of samples, and
 - 25 • performing said division into segments such that each segment has a fixed number of consecutive samples.
- 30 3. A method according to claim 1 or 2, c h a r a c - t e r i z e d in that it further comprises the steps of:
 - estimating a set of filter parameters using linear predictive analysis (LPA),
 - 35 • providing a modified signal (26) by filtering the speech signal through a filter based on said estimated set of filter parameters, and

- calculating said conformity function of the modified signal.

4. A method according to any one of claims 1 to 3,
5 characterized in that said conformity function is calculated as an autocorrelation function.

5. A method according to any one of claims 1 to 4,
10 characterized in that it further comprises the step of:

- selecting, if the peak having the smallest value of said difference is represented by a number of samples, the sample having the maximum amplitude of said conformity function as said estimate of the pitch.

6. Use of the method according to any one of claims 1 to 5 in a mobile telephone.

20 7. A device adapted to estimate the pitch of a speech signal, and comprising:

- means (3) for dividing the speech signal into segments,
- means (5) for calculating for each segment a conformity function for the signal, and
- 25 • means (6) for detecting peaks in the conformity function,

characterized in that the device is further adapted to:

30 • calculate an average value of pitch estimates estimated in a number of previous segments,

- calculate for each peak in the conformity function the difference between the position of the peak and said average value, and

- use the position of the peak having the smallest value of said difference as an estimate of the pitch.

5 8. A device according to claim 7, characterized in that it further comprises:

- means (3) for sampling the speech signal to obtain a series of samples, and
- means for performing said division into segments such that each segment has a fixed number of consecutive samples.

10 9. A device according to claim 7 or 8, characterized in that it further comprises:

- means (4; 24) for estimating a set of filter parameters using linear predictive analysis (LPA),
- means (4; 25) for providing a modified signal by filtering the speech signal through a filter based on said estimated set of filter parameters, and
- means (5) for calculating said conformity function of the modified signal.

15 10. A device according to any one of claims 7 to 9, characterized in that said conformity function is an autocorrelation function.

20 11. A device according to any one of claims 7 to 10, characterized in that it is further adapted to

25 30 select, if the peak having the smallest value of said difference is represented by a number of samples, the sample having the maximum amplitude of said conformity function as said estimate of the pitch.

12. A device according to any one of claims 7 to 11, characterized in that the device is a mobile telephone.

5 13. A device according to any one of claims 7 to 11, characterized in that the device is an integrated circuit.